

ToolKitConcept! Eliminating ParameterSect. 6.2Rule/Formula

given two parametric equations $x_t + y_t$, solve for t on the x -eq. and substitute into the y -eq. for t .

Example:

$$\begin{array}{l} x = t + 1 \\ y = t^2 \end{array} \rightarrow \begin{array}{l} x - 1 = \underline{t} \\ \downarrow \\ y = (x - 1)^2 \end{array} \Rightarrow y = (x - 1)^2$$

Reminders:

check the endpoints on the parametrics (see above) to see if you need to restrict function.

⑥

$$x = -2t$$

$$y = t + 3.5$$

$$m = -\frac{1}{2}$$

$$x = t + 3 \quad \swarrow (3, 2)$$

$$y = -0.5t + 2 \quad \swarrow$$

$$m = -\frac{1}{2}$$

$$x = t$$

$$y = 2t - 4$$

$$m = 2$$

$$x = t + 3 \quad \leftarrow (3, 2)$$

$$y = 2t + 2 \quad \leftarrow$$

$$m = 2$$

⑦

$$a) X = 18T$$

$$Y = 1$$

$$X = 22T - 110$$

$$Y = 2$$

$$22(T - 5)$$

⑥

$$0 \leq t \leq 50$$

$$X_{\min} = 0$$

$$X_{\max} = 900$$

$$Y_{\min} = 0$$

$$Y_{\max} = 3$$

③

Table 27.5 hours

495

$$18(27.5)$$

$$22(27.5) - 110$$

$$18t = 22t - 110$$

$$-18t \quad -18t$$

$$0 = 4t - 110$$

$$+110$$

$$\frac{110}{4} = 4t \Rightarrow 495$$

$$4$$

70)

$$x = 18T$$

$$y = 1$$

$$x = 900 - 22T$$

$$y = 2$$

$$18T - (900 - 22T) = 50$$

$$18T - 900 + 22T = 50$$

$$40T - 900 = 50$$

$$40T = 950$$

$$T = 23.75$$

before
they pass
↓

$$18T - (900 - 22T) = -50$$

$$18T - 900 + 22T = -50$$

$$40T - 900 = -50$$

$$40T = 850$$

$$T = 21.25$$

Angle	$\frac{\text{opposite}}{\text{hypotenuse}}$ <i>sine</i>	$\frac{\text{adjacent}}{\text{hypotenuse}}$ <i>cosine</i>	$\frac{\text{opposite}}{\text{adjacent}}$ <i>tangent</i>
10°	.184	.986	.180
20°	.34975	.93928	.374
30°	.491	.872	.564
40°	.646	.765	.844
50°	.757	.627	1.216
60°	1.977	1.255	1.704
70°	.938	.369	2.613
80°	.983	.202	4.857

BIK 2

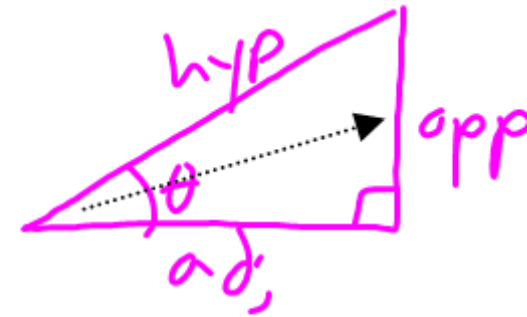
Angle	$\frac{\text{opposite}}{\text{hypotenuse}}$ <i>Sine</i>	$\frac{\text{adjacent}}{\text{hypotenuse}}$ <i>cosine</i>	$\frac{\text{opposite}}{\text{adjacent}}$ <i>tangent</i>
10°	.173	.984	.176
20°	.341	.946	.360
30°	.514	.860	.597
40°	.671	.747	.888
50°	.761	.653	1.165
60°	.832	.601	1.467
70°	.937	.348	2.696
80°	.974	.242	4.383

3rd Block

SOH
i p y
n p p
e

CAH
o d y
s j p
i
e

TOA
a p o
n p j
s
e
n
+



Greek letters often used for angle variables,

α alpha

β beta

γ gamma

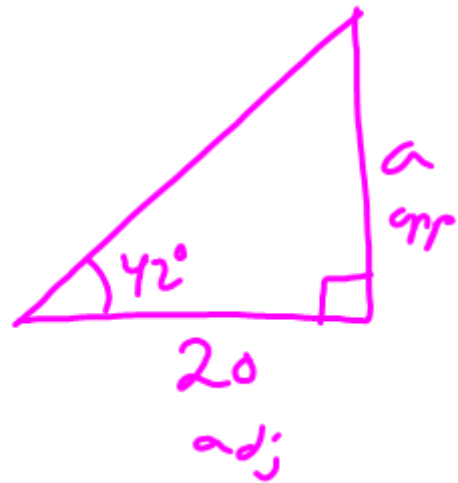
θ theta

To find a missing side given an angle and another side, look at example 1 and use the trig. function.

To find an angle given 2 sides, look at example 2 and use the inverse trig functions.

2nd sin for example.

Ex. 1



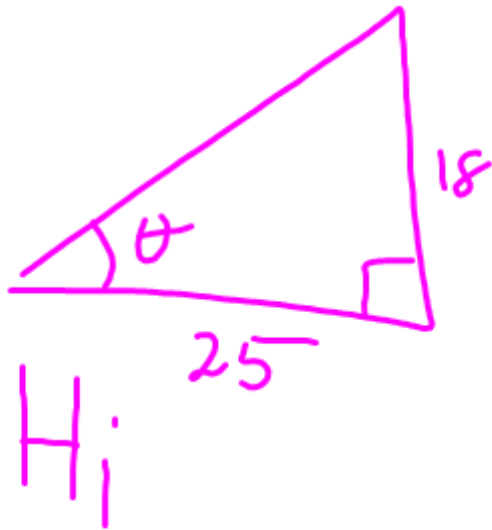
$$20 \cdot \tan(42) = \frac{a}{20} \cdot 20$$

$$20 \tan 42 = a \approx 18$$

Homework

Ex 2

6.3 #1-5, 7, 10-12



$$\cancel{\tan} \theta = \frac{18}{25}$$
$$\tan^{-1}$$

$$\theta = \tan^{-1}\left(\frac{18}{25}\right)$$
$$\approx 35.75$$